

constituents comprising a rare-earth dopant therein; said constituents of the sol-gel glass monolith selected so the rare-earth doped sol-gel glass monolith exhibits a transmittance in the far UV range so at least one spectral feature of the rare-earth dopant in the far UV range is discernable and corresponds to a control value to allow the signal of said sensor assembly receiving light having said wavelength corresponding to said control value to be compared to a standard for determining the calibration of said optical instrument.

Please cancel claims 1, 16, 33 and 21-32 without prejudice to the subject matter therein described.

Remarks

Reconsideration of the above identified application, as amended, is respectfully requested. Applicant has amended the application to focus the present prosecution on features relating to the apparatus and method of using the apparatus. Applicant respectfully submits that Applicant's amendment does not introduce new matter into the Application, but further clarifies and defines the invention.

I. Summary of the Office Action

In the office action the Examiner has made several rejections and comments which are summarized below.

Claim 32 was rejected under 35 USC Section 112, second paragraph.

Claims 1-16, 19, 21, 22 and 22-36 are rejected as being anticipated under 35 USC Section 102(e) as being anticipated by Orignac et al, Applied Physics Lett, vol 69, no 7, pages 895-897 (Orignac).

Claims 1-4, 6, 7, 7-16, 19, 21-26 and 28-36 were rejected as being anticipated under 35 USC Section 102(b) as being anticipated by Xu et al, Journal of Non-Crystalline Solids, vol. 194, pages 235-240, (1996) (Xu).

Claims 1, 10, 12, 21 and 23 were rejected as being obvious over Orignac and Xu under 35 USC Section 103(a).

Claims 17, 18, and 20 were objected to as being dependent upon a rejected base claim.

The Examiner suggested that the Applicant use the term "sol-gel" or "gel-sol" consistently in the claims.

Applicant will address each of the Examiner's rejections and suggestions in the discussion which follows.

II. Discussion

A. Rejection under 35 USC Section 112

The Examiner has rejected claim 32 under 35 USC Section 112, second paragraph. The Examiner contends that such claim is indefinite for failing to distinctly claim the subject matter which applicants regards as the invention. In particular the Examiner objects to the claim language "mid, low and high humidity".

Reconsideration of the Examiner's rejections in this regard is respectfully requested. Applicant has cancelled claims 21-32 without prejudice to the subject matter therein described. Applicant respectfully submits that the cancellation of such claim renders the rejection moot.

B. Rejections under 35 USC Section 102(e) an 102(b)

The Examiner has rejected claims 1-16, 19, 21, 22and 22-36 under 35 USC Section 102(e) as being anticipated by Orignac. The Examiner contends Orignac teaches a waveguide which comprises an Nd or Er doped sol-gel medium, wherein Erbium nitrate is the Er salt. The Examiner contends the waveguide has light input means and means for measuring the spectral output of light. The Examiner contends that the Applicant's intended use does not distinguish the invention from Orignac.

The Examiner has rejected claims 1-4, 6, 7, 9-16, 19, 21-26 and 28-36 under 35 USC Section 102(b) as being anticipated by Xu. The Examiner contends Xu teaches an optical device which utilizes a doped sol-gel comprising Erbium nitrate. The Examiner contends the device has light input means and means for measuring the spectral output of light. The Examiner contends that the Applicant's intended use does not distinguish the invention from Xu.

Reconsideration of the Examiner's rejection in this regard is respectfully requested. With respect to independent claims 1, 16, and 32, which all recite a calibration medium, the rejection fails to consider important features recited in the claims which features are not disclosed, taught, or suggested in the Orignac or Xu reference. Indeed, the present rejection under 35 USC Section 102, is inconsistent with the Examiner's rejection under 35 USC Section 103. The Examiner acknowledges that neither Xu or Orignac teach doping by impregnation. This feature alone should establish novelty. Applicant will describe how such feature also establishes nonobviousness in the next section of this response.

Although Xu and Orignac, may have investigated the spectral properties of sol-gel glass monoliths, Xu and Orignac had no appreciation that such sol-gel glass monolith had applications as a calibration medium. Xu and Orignac did not select the rare earth dopants of the sol-gel glass monoliths to provide transmittance in the far UV range such that the spectral features would be discernable. These features are expressly recited in the present claims and are not disclosed in any manner in the reference of record. These features allow the sol-gel glass monolith to serve as a calibration medium, whereas the materials of the prior art may not.

Applicant has cancelled claims 1, 16 and 32 without prejudice to the subject matter therein defined. In place of claim 1, Applicant has introduced claim 37. Claim 37 is directed to the calibration medium of the present invention. In addition to the features

discussed above with respect to claim 1 (now canceled), claim 37 recites cooperation between the light source, sensor assembly and the sol-gel. That is, the sol-gel must have at least one spectral feature which corresponds to a spectral feature of the light source to allow calibration. This feature is not an intended use as the Examiner contends, but rather a special feature engineered into the sol-gel.

Claim 16, directed to a method of calibration, has been canceled and in its place Applicant has introduced claim 38. Claim 32, directed to an optical instrument, has also been canceled and in its place Applicant has introduced claim 39. Applicant respectfully submits that the features defining novelty over the prior art described with respect to claims 1 (now canceled) and 37, apply to claims 38 and 39 as well.

Applicant respectfully submits the rationale provided by the Examiner, as to intended use not establishing novelty, is inappropriate for the method claims 16 (now canceled), 38, 32 (now canceled) and 39. Perhaps an intended use may not afford novelty to a known substance or article of manufacture. However, such rationale does not apply to a method comprising distinct steps which steps are not taught, disclosed or suggested in the prior art. See: 35 USC Section 100(b) and Loctite Corp. v Ultra Seal Ltd., 781 F.2nd 861, 228 USPQ 90 (Fed Cir. 1985).

Applicant respectfully submits that the features of the present invention, as recited in claims 37, 38 and 39 and all claims dependent thereon are not anticipated by Orignac or Xu.

C. Rejections based on 35 USC Section 103

Claims 1, 10, 12, 21 and 23 were rejected as being obvious over Orignac and Xu under 35 USC Section 103(a). The Examiner acknowledges that Xu and Orignac differ from the present invention in teaching in that doping by impregnation is not disclosed. The Examiner contends that it would be obvious to one of ordinary skill in the art to utilize impregnation instead of mixed doping in the inventions of Xu and Orignac.

Reconsideration of the present rejection in this regard is respectfully requested. Applicant will address the rejection of claim 1 (now canceled) as though such rejection was directed to new claim 37. Claims 21 and 23 have been canceled and the rejection is deemed moot as to such claims.

Xu and Orignac were primarily interested in the application of dopants to effect waveguide functions to fiber optical cables for telecommunications. These materials are not used in a concentration or in a manner analogous to the concentration of the dopants or manner of use of the present invention. Moreover, the present rejections fail to consider the cooperation between the dopant spectral characteristics, light source and sensor assembly as now recited in claim 37. That is, the light source must have a spectral feature which corresponds to the spectral feature of the dopant which can be detected by the sensor assembly. These features are not disclosed, taught or suggested in the prior art.

D. Objected Claims

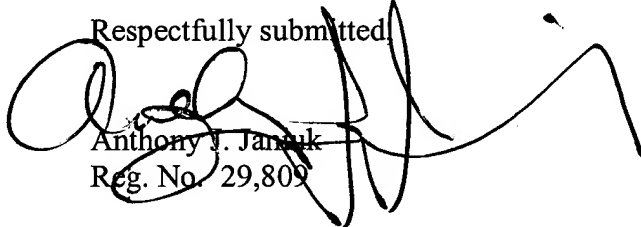
Claims 17, 18, and 20 were objected to as being dependent upon a rejected base claim. Applicant greatly appreciates the Examiner's indication of allowable subject matter. However, Applicant respectfully submits that all claims clearly define patentable subject matter and there is no need to rewrite claims 17, 18 and 20.

E. Sol-Gel or Gel-Sol

Applicant appreciates the Examiner's careful reading of the claims and the comment that Applicant has not been consistent with the term "gel-sol" or "sol-gel". Applicant has surveyed the claims and in each occurrence where Applicant has found the term "gel-sol", Applicant has replaced such term with the term "sol-gel".

III. Conclusion

Applicant respectfully submits that all claims are in condition for allowance which action is earnestly solicited.

Respectfully submitted,

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